TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Form PCT/IPEA/416
P2146 WO		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/EP2004/012370	02.11.2004	04.11.2003
International Patent Classification (IPC) or national classification and IPC		
C03C17/42, C04B41 /89, C23C28/00		
Applicant		
SCHOTT AG		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

   a. ☐ *(sent to the applicant and to the International Bureau)* a total of _____ sheets, as follows:

      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s))

      _____ , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/012370

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

☐ international search (Rule 12.3 and 23.1(b))

☐ publication of the international application (Rule 12.4)

☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1-13 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

nos. 1-12 as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* _____ received by this Authority on _____

nos.* _____ received by this Authority on _____

☐ the drawings:

sheets _____ as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/012370

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	7-10	YES
	Claims	1-6, 11, 12	NO
Inventive step (IS)	Claims		YES
	Claims	1-12	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents:

D1: EP 891 953 A
D2: EP 1 142 845 A

2. The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claims 1-6, 11 and 12 is not novel (PCT Article 33(2)) for the following reasons:

2.1 D1 discloses a glass pane containing a glass substrate, a first layer of silicon dioxide and a hydrophobic second layer. The inner layer is produced via a sol-gel method by applying a silane and subsequently drying. The outer hydrophobic layer is produced from a fluorosilane (see claim 1). On page 3, line 42, it is explicitly mentioned that the layer is applied as sol. The layer thickness of the inner layer is up to 30 nm (see claim 6). Dipping and spraying are indicated as coating methods (see page 4, lines 10-13). In example 1, after the substrate has been cleaned, a silicon dioxide layer is applied which, after drying at room temperature, is 20 nm thick (in the present application, e.g. in

example 4, drying is also carried out at room temperature). It is generally known that, in this coating method, a gel layer is formed from the sol applied, even if this is not explicitly mentioned. Since drying is carried out at the same temperature as in the present application, the first layer disclosed in D1 can be designated an inorganic sol-gel layer within the meaning of the present application. In example 1 of D1, a fluorosilane-containing layer is then applied, which is baked for 30 minutes at 140 °C. In examples $3A_1A$ and $4A_1B$, the first layer is dried at 100 °C for an hour and the second layer is baked for 30 minutes at 140 °C. The subject matter of claims 1-6, 11 and 12 is therefore not novel over D1.

2.2 D2 discloses in claim 1 a method for producing a coating in which a silicon dioxide layer containing hydroxyl groups is produced from a silane solution, wherein the layer is merely dried briefly - if at all - at 80 to 150 °C so as to obtain the OH groups (see page 7, lines 56-58). Consequently, both drying merely at room temperature and drying at a temperature of 80 °C are explicitly disclosed. In the examples, the coating solution is produced at 15% relative air humidity and applied. As a result of the water present in the air, there is necessarily a hydrolysis and condensation reaction typical for the sol-gel method, as described in the final paragraph of page 5 of the present application. An inorganic sol-gel layer is thus formed. Subsequently, a fluorosilane layer is deposited and baked for 10 to 100 minutes at a temperature of 300 to 450 °C (see claims 2-4). In the examples, a thickness of 50 or 40 nm is given

for the silicon dioxide layer. Dipping, for example, is indicated as a coating method (see page 7, lines 30-33), the substrate having been previously cleaned and degreased (see page 7, lines 19-20). The subject matter of claims 1-6, 11 and 12 is therefore not novel over D2 either.

3. The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claims 7-10 does not involve an inventive step (PCT Article 33(3)).

The additional technical features indicated in these dependent claims are only one of several obvious possibilities from which a person skilled in the art aware of the prior art disclosed in D1 and D2 would choose to solve the problem of interest according to the circumstances, without thereby being inventive.